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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|--|-------------------------|
| 10/054,525 | 01/22/2002 | Vladimir Zabezhinsky | AMCC6000 | 5983 |
| <div>7590 Terrance A Meador INCAPLAW 1050 Rosecrans Street Suite K San Diego, CA 92106</div> | | | <div>EXAMINER SHAND, ROBERTA A</div> | |
| | | | <div>ART UNIT 2616</div> | <div>PAPER NUMBER</div> |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/054,525 | Applicant(s) ZABEZHINSKY, VLADIMIR | |
| | Examiner Roberta A. Shand | Art Unit 2616 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-30 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A claimed “distributed data frame structure” does not fall within any of the categories of patentable subject matter set forth in 35 U.S.C. 101. See Interim Guidelines page 55.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 7-10, 13-16, 18-26 and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Lubarsky (U.S. 4601045).

4. Regarding claim 7, Lubarsky teaches (fig. 1) a method of formatting a distributed data frame structure comprising: receiving a plurality of data frames (col. 4, lines 10-17), each composing a plurality of bytes; establishing a plurality of sub frame structures (Lubarsky teaches dividing the serialized data into segments), each corresponding to one of a plurality of different transmission channels (fig. 1, 14 channels); performing a rotating deinterleaving procedure on

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said plurality of data frames (Lubarsky teaches, col. 4, lines 10-25, after dividing the data into segments, inserting a sync word in each segment, which reads on applicant's definition of rotating deinterleaving).

5. Regarding claim 8, Lubarsky teaches (fig. 1) the rotating deinterleaving procedure distributes bytes from each of said plurality of data frames among each of said plurality of sub frame structures.

6. Regarding claims 9,10, 18 and 19, Lubarsky teach (col. 4, lines 10-25) each of said plurality of data frames includes a frame alignment signal (sync word) comprising a pattern of bits; distributes said frame alignment signal periodically within each of said plurality of sub frame structures (inserting the sync word in each segment); and rotating interleaving on the aligned sub frames to recreate the plurality of frames (col. 9, lines 3-25 and fig. 2).

7. Regarding claim 13, Lubarsky teaches (fig. 1) a data communication apparatus comprising: an input node configured to obtain a plurality of data frames (serialized data), each comprising a plurality of bytes; and reformatting the data frames into a plurality of sub frame structures (Lubarsky teaches dividing the serialized data into segments), each corresponding to one of a plurality of different transmission channels (fig. 1, 14 channels); performing a rotating deinterleaving procedure on said plurality of data frames (Lubarsky teaches, col. 4, lines 10-25, after dividing the data into segments, inserting a sync word in each segment, which reads on applicant's definition of rotating deinterleaving).

8. Regarding claim 14, as for a plurality of serializers being configured to generate serial data representing one of said plurality of sub frame structures, a serializer is inherent in Lubarsky's system since serial data is transmitted on the channels fig. 1.

9. Regarding claim 15. Lubarsky teaches (fig. 2 and col. 9, lines 10-25) a framer configured to align said plurality of data frames.

10. Regarding claims 16 and 22, Lubarsky teaches (fig. 1) a data communication method comprising: receiving a plurality of data frames (serialized data) at a first data rate, each of said plurality of data frames comprising a plurality of bytes; performing a procedure to distribute data from said plurality of data frames into a plurality of sub frame structures (col. 4, lines 10-17, Lubarsky teaches dividing the serialized data into segments); and transmitting each of said plurality of sub frame structures over one of a plurality of channels (fig. 1, 14 channels), each of said plurality of sub frame structures being transmitted at a second data rate less than said first data rate (col. 3, lines 1-6); performing a rotating deinterleaving procedure on said plurality of data frames (Lubarsky teaches, col. 4, lines 10-25, after dividing the data into segments, inserting a sync word in each segment, which reads on applicant's definition of rotating deinterleaving).

11. Regarding claims 20, 25 and 29, Lubarsky teaches (fig. 2 and col. 9, lines 1-25)) de-skewing the aligned sub frame structures.

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12. Regarding claim 21, Lubarsky teaches (col. 9 and fig. 2) the rotating interleaving procedure reverses the effect of said rotating deinterleaving procedure.

13. Regarding claim 23, Lubarsky teaches (fig. 1) a data communication apparatus comprising: at least one input node configured to obtain a plurality of sub frame structures from a plurality of channels (fig. 1 14 channels), each of said plurality of sub frame structures comprising a plurality of bytes; and a configured to distribute data from said plurality of sub frame structures into a data frame (Lubarsky teaches data recovery, col. 8, line 21 – col. 9, line 25); performing a rotating interleaving (demodulating) procedure on said plurality of data frames (fig. 2).

14. Regarding claims 24 and 28, Lubarsky teaches (figs. 1 and 2) a plurality of framers configured to frame said plurality of sub frame structures to obtain aligned sub frame structures.

15. Regarding claims 26 and 30, Lubarsky a method comprising: receiving, at a first data rate, a plurality of sub frame structures from a plurality of channels (fig. 14 channels) plurality of sub frame structures comprising a plurality of bytes; and performing a procedure to distribute data from said plurality of sub frame structures into a data frame formatted for transmission at a second data rate higher than the first data rate (col. 3, lines 1-6); performing a rotating interleaving (demodulating) procedure on said plurality of data frames (Lubarsky teaches data recovery, col. 8, line 21 – col. 9, line 25)

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 12, 17 and 27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubarsky in view of Agarwal (U.S. 6931009 B1).

18. As mentioned above Lubarsky teaches all of the limitation in claim 1.

19. Lubarsky does not teach ITU each data frame is formatted in accordance with ITU-T Recommendation G.709W.1331.

20. Agarwal teaches (col. 1) Recommendation ITU-TG.709W. It would have been obvious to one of ordinary skill in the art to adapt this to Lubarsky's system as it is well known in the art

Allowable Subject Matter

21. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Response to Arguments

22. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberta A Shand whose telephone number is 571-272-3161. The examiner can normally be reached on M-F 9:00am-5:30pm.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Roberta A Shand
Examiner
Art Unit 2616



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